

Abstract

Portable data storage device using memory address mapping table

A portable data storage device includes a USB controller, a master control unit and a NAND flash memory device. The master control unit receives data to be written to logical addresses, and instructions to read data from logical addresses. It uses a memory address mapping table to associate the logical addresses with the physical addresses in the memory device, and writes data to or reads data from the physical address corresponding to the logical address. The mapping is changed at intervals, so that different ones of the physical address regions are associated at different times with the logical addresses. This increases the speed of the device, and also means that no physical addresses are rapidly worn out by being permanently associated with logical addresses to which data is written relatively often.

[Fig. 3]